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Forty Years of Plenty

In this land of ours there have been forty years, and many more, of relative plenty. Since nothing is more essential than food, it will serve as an excellent illustration. Through all this period American farms have produced an average of about five pounds of cereals per person per day, several times more than can be eaten. Of course, large quantities of grain have been exported and greater quantities have been fed to live stock, only to be transformed into meat and meat products. Orchards have yielded more than six million tons of fruit per year, and citrus groves two-thirds as much. The consumption of both meat and sugar in this country has exceeded an average of over one hundred pounds per person per year, and relatively similar quantities for other principal foods.

In the interval from 1900 to 1940 the population of continental United States increased from about 76,000,000 to 132,000,000, or over 70 percent. Yet in that period the number of farm workers decreased more than 10 percent to about 10,600,000. The greatly increased production by fewer workers was not the result of longer hours of work or more help by women and children. On the contrary, it was due to the introduction of science and technology into agriculture—to better tillage and fertilization of the soil, to better crops and live stock through plant and animal breeding, to protection against insects and other pests, and to the introduction of labor-saving machinery.

The period from 1900 to 1940 was one of enormous increase in the conveniences of life. In

this interval the number of telephones increased sixteen fold, and the number of homes having electric lights increased from relatively few to 23 million. The use of electric energy increased four fold in the interval of only 23 years between the Treaty of Versailles and the attack on Pearl Harbor. The forty years from 1900 to 1940 cover almost the entire existence of concrete pavements and practically the whole history of motor cars as appreciable means of transportation. From only 4,000 automobiles constructed in 1900, the number increased to almost 4,000,000 in 1937; from 2,446,000 cars and trucks licensed in 1915, the number increased to over 32 million in 1940. Every one of these developments made the physical aspects of living easier.

Airplanes were first flown appreciable distances only a little more than thirty-five years ago. They first carried mail in this country in 1918, in that year covering a total distance of 16,000 miles. In 1940 planes carrying mail flew over 59 million miles, a record which has already been doubled, and the total distance flown by passenger planes exceeded 119 million miles. Instead of being exceedingly dangerous, in 1940 the accidents to regular passenger planes was only one for more than two million miles flown, a record that has been greatly surpassed since that year. The number of passengers carried by planes per year passed the three million mark in 1940.

Perhaps no index of the general prosperity of a people is better than the character and equipment of their homes. In the twenties, apartments and other multiple-unit dwellings became so popular that only 40 percent of all new construction, both urban and rural, was for one-family use. In new construction in recent years there has been a progressive return to one-family units. In 1940 there were over 37 million single-family dwellings in the United States, nearly 40 percent of which were owned by the occupants. Of 35 million homes reporting on sanitary equipment and lighting, a little more than 54 percent were equipped with private baths and flush toilets and 78 percent had electric lights. Reports from

about 34 million homes show that 83 percent have radios and over 44 percent have mechanical refrigeration equipment.

It is not expected that readers will remember any considerable fraction of the foregoing statistics. But together they present a general picture of amazing changes in the environment of Americans within an interval of about one generation. What has actually taken place has far exceeded the highest hopes of our predecessors of forty years ago. No one yet has even suggested any comparable new goals to be attained during the next forty years. Science and technology have outrun human imagination and leave us for the moment with the dull prospect of striving for nothing better than more of the same things. Of course, there remain serious deficiencies, as the quoted statistics of sanitary equipment and electric lights in homes clearly indicate, but production during the war period proves conclusively that this country has the capacity to supply these remaining wants and make up for all the vast wastage of war within a decade or two. Whether there will be the unity of purpose and the freedom from conflicting ambitions necessary for such an achievement is quite another question.

Many times in the historic past there has been plenty for the few, but never before for the many. There is nothing in the history of those periods to support the theory that the few can permanently flourish at the expense of the many. Now science and its applications make it possible for the first time to provide entire populations with plenty—not with food and homes and physical things alone, but with opportunities for developing and exercising the high and varied faculties which are the chief distinguishing characteristics of man. Is there enough wisdom and generous goodwill in the world to justify hopes that these longed-for aims will be realized? That is the supremely important question of today.—F.R.M.

Education of U. S. Armed Forces

In view of the plans for assisting the enlisted personnel in our armed forces to continue their education, it is important for educational institutions to have advance estimates of the number of students they are likely to secure from these sources. Two basic data for such an estimate are the number of men and women likely to be released from service soon after the close of the war and the preparatory educational work they have completed.

A Committee of the Office of Education has made a preliminary report on this subject based on representative samplings from the enlisted personnel of the Army, the Navy, and the Marine Corps. The following table is based on samplings of enlisted men in all branches of military service, irrespective of age, marital status, occupation, and future plans.

EDUCATION OF ENLISTED MEN IN ARMED SERVICES

Grade school	Number of men	Percent
1-8 years	3,170,000	29.4
High school		
One year	940,000	8.7
Two years	1,310,000	12.1
Three years	1,260,000	11.7
Four years	2,670,000	24.7
Total	6,180,000	57.2
College		
One year	560,000	5.2
Two years	370,000	3.4
Three years	180,000	1.7
Four years	330,000	3.1
Total	1,440,000	13.4
Grand total	10,790,000	100.0

There are also approximately 200,000 women in the various branches of the service. As might be expected from the relatively small numbers of this volunteer group, the average educational level was higher than in case of the men. Of the 200,000 women, over 20 percent had attended college at least one year and 6.7 percent had attended college four or more years. Over 50 percent had finished at least four years of high school work.

A hasty consideration of the table might lead to the conclusion that very large numbers of men who will be released from the army might continue or take up college work. But many of those who have completed four years of high school work or part of a college course will already have discontinued formal education before being inducted into service. Some light is thrown on the subject by the replies of 10,000 soldiers on duty in the United States who were questioned early last spring regarding their desires for further education in schools and colleges. Of those questioned, seven percent expressed a definite intention of returning to school, with or without financial aid from the government, but three percent said they would not do so if good jobs were available. The conclusion from this sampling as reported in the March 3 issue of *Education for Victory*, an Office of Education publication, is that an additional five percent may return to full time school and

college work with Government aid. If those possibilities are realized, from 100,000 to 200,000 returning soldiers may enter or continue college work upon their release from our armed services. In 1940 the total resident college enrolment of men in institutions of higher learning in Continental United States was reported to be 892,250. Probably the return to college of 100,000 or even 200,000 would not more than compensate for the reduction in men students due to the war.

The November Scientific Monthly

The important role of "shivering wafers of rock" in war communications is described in the leading article by Dr. J. O. Perrine, Assistant Vice President of the American Telephone and Telegraph Company. He explains not only the origin, characteristics, preparation, and functions of quartz crystal plates, but gives a complete background of the discovery and development of piezoelectricity and its relation to other sources of electric energy. Thus, he develops a fascinating story of electricity in its relation to human welfare.

The next article, which might have been entitled "Hillbillies of Japan," is an unpretentious account of a few days' hike through a mountainous area of the southern island of Kyushu, the island that has recently received the attention of our B-29's.

Occasionally, outstanding articles of permanent value will be reprinted in *The Scientific Monthly*. Such is the article by Professor T. C. Chamberlin, the famous geologist of The University of Chicago, who died in 1928. Chamberlin discusses the proper intellectual approach to scientific investigation and points out how to avoid wishful thinking. Visher's article on the seasons, accompanied by his characteristic maps, will serve to confirm the opinion of each reader that he lives in the best spot in the United States. Mr. Hedgpeth is engaged in a crusade to save from extinction the salmon of the Sacramento River. In presenting his case he describes the biology of salmon and tells the story of the rise and fall of the salmon fisheries of central California.

In this issue is concluded the thoughtful essay of Professor Holmes on the development of form in living organisms. Professor Lehman is well known for his studies of man's most creative years. In his present article he shows graphically the optimum periods of life during which the most outstanding works have been produced by scientists, writers, and musicians.

Perhaps the last place that the uninitiated would look for organic pigments would be in the bottom of the ocean, yet here Professor Fox of the Scripps Institution of Oceanography finds yellow pigments that have persisted so long in the mud of the ocean bottom as to merit the name "fossil pigments."

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The Cleveland Meeting

It has long been the policy of the Association to publish comprehensive reports of its meetings in *Science*. Accordingly, a more extended report on the Cleveland meeting than can be printed here will appear in an early issue of that journal. The account here must be limited largely to general comments on the significance of the meeting.

In 1942 the New York meeting was canceled at the request of the Office of Defense Transportation barely a month before it was scheduled to be held. The Association had already spent more than \$3,000 in preparation for it. The following year no plans were made for a meeting. Consequently scientists, particularly in the biological fields, were eager to get together again to discuss with one another the problems on which they were working. There were misgivings, however, because the railroads were still overburdened with passenger traffic and there was a shortage of hotel accommodations in Cleveland. In spite of fears, plans for the meeting went steadily forward and the difficulties were found to be much less serious than had been anticipated.

The feature of the Cleveland meeting that most clearly distinguished it from earlier meetings of the Association was the large number of programs on broad problems of human welfare. The first general session, that at which Dr. Isaiah Bowman's address as retiring president of the

Association was delivered, struck the keynote of the meeting. The title of Dr. Bowman's address was "Commanding our Wealth." In a sense, its text was a quotation from a radio address by Prime Minister Churchill delivered in Quebec, August 29, 1943, when he spoke of marching forward to the end of the present military struggle when "the whole world may turn with hope, with science, with good sense and dearly bought experience, from war to lasting peace." The four horsemen, as Dr. Bowman called them, who will lead the world to victory in the post-war years are precisely hope, science, good sense, and experience. Hope and science were clearly in the ascendancy at Cleveland, and, we may believe, were guided by good sense and rested on experience. Dr. Bowman illustrated the application of these principles in considering world problems of mass migrations of human beings after the close of the war.

One of the interesting programs which was international in subject and in organization was a symposium on "The Role of Science in United Nations Collaboration for the Improvement of Nutrition and Agriculture after the War." It was organized by Dr. Howard R. Tolley, Chief of the Bureau of Agricultural Economics, U. S. Department of Agriculture. The first participant in this program was Dr. Frank G. Boudreau, Director, the Milbank Memorial Fund. The others were Professor Robert Rae, Professor of Agriculture, University of Reading, England, and Mr. P. Lamartine Yates, British Ministry of Agriculture.

A symposium on "Quartz" by the geologists and the physicists dealt with a subject which has suddenly become of critical international importance. For our armed forces, in connection with radio communication, it is as essential as guns or airplanes or tanks. The demand for quartz crystals in equipment for the use of the armed forces of the Allied Nations involves the expenditure of several hundred million dollars per year, and almost all the quartz crystals of sufficiently large dimensions and high quality to be useful are found in one country—Brazil.

Among the titles of other symposia on subjects of general interest were "Biologists and Rehabilitation," "Nutrition—Some Current Views," "Biology and Human Progress," "Psychology and Post-war Problems," "Science and the New World," "Aviation Medicine," and "The Joint Responsibilities of Science and the American Press in the Post-war World." Mere titles can do no more than indicate inadequately the riches of the varied programs presented by 43

different groups, namely, sections of the Association, affiliated scientific societies and other organizations. The names of more than 800 persons were listed in the index of the general program. Science has been and is still contributing to the prosecution of the war, but soon it will be on the march again along all the paths of peace to happier days.

Association Membership Status

Annual memberships in the Association are for the period from October 1 to September 30 of the following year. However, the subscriptions for the A.A.A.S. BULLETIN and either *Science* or *The Scientific Monthly* which members receive with their memberships are for the calendar year, for each of these journals begins a new volume in January.

It was not expected that the Association would add a very large number of new members to its membership roll during the past year. The war had reached an acute stage and a large fraction of young scientists were serving in our armed forces or were otherwise absorbed in war work. Even those who were not so engaged almost without exception were carrying much more than their normal work. The distractions were almost endless and increased throughout the year, and the Association had not held a meeting for two years. Finally, living costs and taxes were high. Under these various adverse conditions some decrease in the membership of the Association would not have been generally surprising.

When the records were closed on September 30 it was found that during the year 2,173 persons had been admitted for the first time as members of the Association, and that 71 had been reinstated whose memberships had lapsed for various reasons. Among the 2,244 new members and reinstated members, 11 were life members. Only twice since 1930 have larger numbers of persons been admitted to membership in the Association in one year, and those were the immediately preceding years 1942 and 1943, in which new members and reinstatements were 3,278 and 2,701, respectively.

Of the 2,173 new members this past year, 470 made application on their own initiative for membership in the Association; the corresponding number in the preceding year was 281. Nominations from members resulted in the election of 135 new members; in the preceding year the corresponding number was 163. From the membership rolls of the 138 affiliated academies and societies, 827 persons became members of the As-

sociation. A new and probably significant source of membership was the United Chapters of the Phi Beta Kappa, from which 265 new members were admitted. If this development means that scientists and other scholars are finding that they have much in common, it promises an enrichment of both fields in the future. Perhaps this development should be expected because Phi Beta Kappa and the Association have sponsored lectures at annual meetings of the Association for a number of years, the eighth of such lectures having been delivered at Cleveland.

There are, of course, losses of members by deaths, resignations, and failure to pay dues. Last year there were 253 deaths, a larger number than in any previous year except 1939, when the same number of members died. But in 1939 there were only 20,195 members and the percentage of deaths was 22 percent higher than in this past year. Of the deceased 253 members, 31 were life members. There was, consequently, a net loss in life members of 20.

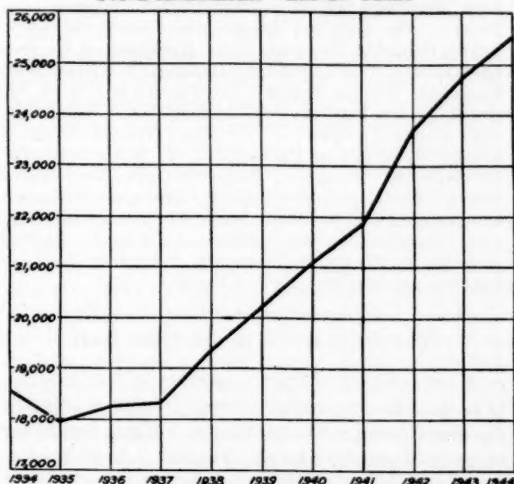
During the past year 471 members were lost by resignations. A large percentage of these resignations were from older members who had retired from active duty on pensions and felt they should curtail expenditures. It is often almost tragic for scientists who have been members of the Association for many years to give up receiving their journals. An endowment yielding about \$1,000 per year is much needed to provide journals for these worthy cases.

Finally, 759 members were dropped because of arrears in their dues. In some cases changes of occupation and address resulted in loss of contact with members. In a few cases the Association was not notified of the deaths of members who are in due course dropped for nonpayment of dues. In others, it was probably negligence on the part of members. The total loss in membership during the year from deaths, resignations, and for nonpayment of dues was 1,483 as compared with 1,405 in the preceding year, the largest difference being among those with whom the Association lost contact by mail. The membership of the Association on September 30 was 25,487, a net increase of 761 over the preceding year.

As for the coming year, the prospects are promising. The European phase of the war appears to be drawing to a close. Within a few months after its close a large fraction of scientists in civilian war work will return to the problems of peace, and many of those in the armed services will be released. Meetings of scientists

will be fully resumed. The world will look to science to play a role during future years of peace as important as that which it has played during the war. It will be the purpose of the Association and of scientists generally to measure up to the opportunities opening up before them.

TOTAL MEMBERSHIP—ELEVEN YEARS



1934	18,553	1938	19,347	1942	23,716
1935	17,937	1939	20,195	1943	24,726
1936	18,242	1940	21,067	1944	25,487
1937	18,303	1941	21,798		

New Association Book on Hormones

"Our Present Knowledge of the Chemistry and Physiology of Hormones" is the title of a new symposium volume that will be ready for distribution about December 1. It is based on one of the AAAS-Gibson Island conferences held in the summer of 1943. The Publication Committee for this 260-page volume are Drs. H. Jensen, Frederick C. Koch and Abraham White. The table of contents of this volume is as follows:

The Isolation and Chemistry of Anterior Pituitary Hormones Influencing Growth and Metabolism, by ABRAHAM WHITE, Yale University; The Chemistry of Gonadotrophins of Pituitary Origin, by BACON F. CHOW, The Squibb Institute for Medical Research; The Chemistry and Physiology of the Posterior Lobe of the Pituitary Gland, by GEORGE W. IRVING, JR., Department of Agriculture; The Pituitary Growth Hormone, by WALTER MARX and HERBERT M. EVANS, University of California; The Isolation and Chemistry of the Adrenal Hormones, by MARVIN H. KUIZENGA, The Upjohn Company; The Chemistry of Insulin, by H. JENSEN, The Upjohn Company; The Physiological Action of Insulin, by F. D. W. LUKENS, University of Pennsylvania; The Physiological Action of the Adrenal Hormones, by DWIGHT J. INGLE,

The Upjohn Company; Euthyroidism and Thyroid Dysfunction, by WILLIAM T. SALTER, Yale University School of Medicine; Synthesis of the Steroid Hormones, by ERWIN SCHWENK, Schering Corporation; The Isolation and Chemistry of Human Chorionic and Pregnant Mare Serum (Equine) Gonadotrophins, by SAMUEL GURIN, University of Pennsylvania; The Gonadotrophic Function of the Pituitary Gland, by HARRY L. FEVOLD, Western Regional Research Laboratory, Department of Agriculture; The Physiology of the Gonadotrophic Substances of Blood, Urine and Non-Hypophyseal Tissues, by LOUIS LEVIN, Columbia University; The Hormones of the Gastro-Intestinal Tract, by HARRY GREENGARD, Northwestern University Medical School; The Present Status of the Anti-Hormone Problem, by KENNETH WADE THOMPSON, Yale University School of Medicine; The Excretion of Steroid Hormones in Urine, by T. F. GALLAGHER, The University of Chicago; I. Concerning the Biochemistry and the Physiological and Clinical Significance of the Sex Hormones and 17-Ketosteroids and II. Neuro-Endocrine and Cyto-Physiological Aspects of Adenohypophysial Function, by HARRY B. FRIEDGOOD, Peter Bent Brigham Hospital and Harvard Medical School.

The Association in the Near East

A letter received from a member of the Association who has recently returned from a mission for the Government to the Near East, including stops in Morocco, Algeria, Tunisia, Libya, Egypt, and the Anglo-Egyptian Sudan before he arrived at Palestine, Trans-Jordan, The Lebanon and Syria, contains items of interest to members of the Association:

Experienced travelers in war time can appreciate the big sign posted in one of the airports in Africa—"It takes time for fair to travel by air." Thus warned the wise passenger prudently seeks for books, journals, and papers to read during the tiresome wait after being awakened in a hot, crowded hotel room at 2:00 a.m. to make a 5:00 a.m. flight, which usually begins at 6:00 a.m., and to reduce the boredom of long, uncomfortable and monotonous flights. All too frequently reading material cannot be purchased, and one must depend upon his fellow travelers for a loan.

When I left Washington I took with me all the local newspapers, three issues of *Science*, and several other publications. As soon as we were straightened out on the first leg of the journey I began to read. Pretty soon I noticed that several of the passengers had no reading matter. I divided my material, but carefully collected it before we came down in Africa, where I was met by an old friend who promptly took the Washington papers, but I managed to keep the journals. On the flight across Africa we made four stops. At none of these stops was I able to augment my dwindling supply of reading material. Back issues of *Science* were seen at every stop we made. The newest issue of *Science*, Friday, June 2, 1944, was seen at the frontier post between Palestine and Syria. The frontier guard reported that it had been left there only the day before by a "high ranking U. S. Army officer."

All the airports are several miles away from the nearest city and are manned by persons who carefully collect every bit of reading material and pass it "from hand to

hand until it is soon much the worse for wear." The universal complaint is that the light paper now being used will not stand up under the hard use it is given. This complaint is well founded.

When I left Palestine on my way home I lightened luggage and gave my July issue of *Science* to a newly made friend, an engineer, who was on his way back to China.—C. S. STEPHENSON.

Thanks to Generous Members

Last August it became necessary a second time to ask members of the Association who had back numbers of *The Scientific Monthly* or *Science* which they did not want to keep permanently to make them available for recently elected members who desire back numbers of their journals from the beginning of the year. In no case is it desired that a member shall donate back issues of his journals if for any reason whatever he wishes to keep them or to dispose of them otherwise.

The occasion for the recent request was that an unexpectedly large number of persons became members of the Association during the spring and summer months. Since the limitations on the use of paper were severe, not enough extra copies were printed in the early months of the year to meet later requirements.

About 3,000 letters were sent to members of the Association, explaining the need for back numbers of the journals, especially *The Scientific Monthly*. The response to these letters was prompt and generous. Up to date 2,905 copies of *The Scientific Monthly* have been received and 129 copies of *Science*. All needs for back numbers of both journals have now been met except for copies of *The Scientific Monthly* for February and March of this year, of which about 100 more copies are required.

Naturally the question arises whether such requests for back numbers of the journals will be repeated in the future. In spite of the fact that more applications for membership are being received than a year ago, it is hoped and expected that means will be found to meet all journal requirements in the future.

The Kansas Academy of Science

"Moved by the impulses of the age," a few naturalists in 1867 resolved to organize, if possible, a society for the cultivation of science, particularly in its relation to the state of Kansas.

After considerable correspondence among the naturalists of the state relating to the possibility of organizing such a society, a letter was published in the *Kansas Journal of Education* for March, 1868, calling

attention to the benefits of such an organization. The publication of this letter met with such favor from the "friends of science" throughout the state that an invitation was issued in July of 1863 by 17 of the leading scientists of Kansas calling a general meeting in Topeka.

The first meeting was held September 1, 1863, at Lincoln College (now Washburn Municipal University) where, after mature deliberation and thorough discussion, the Kansas Natural History Society was organized and officers elected. Prof. B. F. Mudge was the first president and Prof. J. D. Parker the first secretary. Two other prominent workers in the new organization were John Fraser, Chancellor of the University of Kansas, and F. H. Snow, Professor of Natural History and later Chancellor of the University of Kansas. The first woman joined the organization at the third annual meeting in 1870.

In 1873 the Academy became a coordinate department of the State Board of Agriculture through which it obtained publication of the *Transactions* until 1922. During the period of 1895-1921, inclusive, the Academy received legislative appropriations which provided a salary for the secretary.

The Kansas Academy is one of the oldest state academies in the United States. It has issued the *Transactions* since 1872. Volumes 1, 2, and 3 were originally published as parts of the State Agricultural Reports for 1872, 1873, and 1874. They were reprinted by the Academy in 1896. Each succeeding volume contains papers for the one year or for the biennium except the period 1922-28, inclusive, when the state provided no aid to support publication. Under the secretaryship of the late Prof. George E. Johnson, with the active cooperation of several members, the Academy undertook the publication of its *Transactions* in 1928 and brought out volumes 31 to 36. The papers presented during the 1922-28 period are for the most part, given in abstract form in volume 31. The State Printer printed volumes 37-43; the Academy printed volumes 44, 45, and 46 at its own expense, partially from funds which had been conserved to endow research. The 1943 volume is No. 46.

During the summer of 1878 the Academy started a library by the exchange of publications. In 1884 the office of librarian was created and filled. By means of later additions and exchanges the Academy accumulated a large and valuable library. This was largely due to the enthusiasm of Librarian B. B. Smyth who arranged exchanges with many scientific societies in all parts of the world. For years the library occupied a room in the State House at Topeka. Later the problem of properly housing and caring for it led to its distribution among the libraries of the University of Kansas, Kansas State College of Agriculture and Applied Science, and Fort Hays Kansas State College, when these schools purchased the exchange rights to the *Transactions* in 1930. Since that time the Academy has received a total of \$500 annually from the three cooperating libraries for these rights.

One role played by the Academy, in which it takes just pride, was the influence it had on the formation of the State Geological Survey of Kansas. Professor Mudge was state geologist and as such wrote the "First Annual Report on the Geology of Kansas" in 1864 (published in 1866). Much discussion favorable to this project was voiced through the Academy. It is exemplified in the address of the retiring president for 1884 (volume 9 of the *Transactions*) entitled, "Is a Geological Survey of the State a Necessity?"

To foster original research and investigation has always been a major purpose of the Academy, and the range of topics covered has been wide. As would be expected in a state so eminently agricultural, much attention has been paid to botany, zoology, and entomology. During the period 1922-28, when the Academy did not publish the *Transactions*, the entomologists of the state formed the Kansas Entomological Society which became affiliated with the Academy at the time of its rejuvenation in 1928. This affiliated society has had its own publication, the *Journal of the Kansas Entomological Society*, since 1928. The Academy has sections on botany (interpreted broadly to include bacteriology and agronomy), chemistry, physics, psychology, zoology, and a junior academy for high school students interested in science. Occasionally additional sections are established for certain meetings.

In 1931 the Academy established an endowment fund after a financial agreement for the exchange rights of the Academy's *Transactions* had been reached between the Academy and three state schools as stated above. The first report of the endowment committee was made in volume 35 of the *Transactions*. State publication of the *Transactions* during the 1934-40 period plus the donation of a thousand-dollar bond in 1937 by Mrs. Otilla Reagan in honor of her deceased husband, Dr. Albert B. Reagan, a long-time member of the Academy, has allowed the building of a fairly sizable fund.

An annual meeting is held each year at one of the institutions of higher learning in the State. In recent years the meetings of the first and third years of a four-year series have been held at the University of Kansas and Kansas State College of Agriculture and Applied Science, respectively, while the meetings of the second and fourth years have been held at other colleges in the State. The entire Academy met as one assemblage until an increased number of papers brought a need of more specialized sections. The annual meetings are now conducted in general sessions, where addresses and papers of broader interests are given, and in section meetings, where the specialized papers are presented. The Academy now has an editorial board consisting of an editor, a managing editor and four associate editors.

The Academy has a council consisting of the president, president-elect, vice president, secretary, treasurer, the retiring president, the editor, the managing editor, the chairman of the junior academy committee, and three other members nominated by the nominating

committee and elected as are other officers. The council meets at the annual meeting and on other occasions as demanded. It has general oversight of Academy affairs not otherwise assigned constitutionally to officers or committees. The president, secretary, and treasurer constitute the executive committee responsible to the council. The incoming president serves one year as president-elect and thus has opportunity to become familiar with the duties of the office.

The scope of the interest of the Academy is shown by its committees. It has the following standing committees: Conservation and ecology; research awards; coordination of science groups; handbooks; membership and program; necrology; junior academy; educational trends; finance, endowment and investments; state aid; science in public relation; auditing; resolutions and nominations. It has at present one temporary committee dealing with the relation of the Academy to the war. The committee on conservation and ecology studies locations which should be preserved in their natural state for posterity and assists in various ways to bring about their preservation. That on coordination of science groups seeks to coordinate and cooperate with other organizations in the state for the advancement of science.

The object of the Academy today is the advancement of science, its diffusion not only to the scientist but to the layman as well, and the improvement of science teaching in Kansas. The Kansas Association of Teachers of Mathematics and the Mathematical Association of America, Kansas Chapter, cooperate in this work by holding their sessions at the time and place of the Academy meetings. They are not formally affiliated with the Academy. To further the diffusion of science to the layman, the Academy presents at each annual meeting one or more addresses which appeal to the general public.

The Academy has three classes of membership:

(1) *Annual*. Annual members may be elected at any time by the committee on membership, which consists of the secretary and other members appointed, annually, by the president. Dues of \$1.00 a year entitle the member to receive the *Transactions*.

(2) *Life*. Any person who pays \$30.00 in annual dues, in a lump sum or in any combination, and is recommended by the membership committee and receives a majority vote of the Academy during its annual business meeting, becomes a life member, exempt from dues.

(3) *Honorary*. Elected because of special prominence in science. Honorary members pay no dues.

At present (1943) there are 7 honorary, 63 life, and 443 annual members.

The Academy awards the following research funds, medals, etc.: Approximately \$75 per year from the American Association for the Advancement of Science research fund; \$25 from the Academy research fund; and \$32.50 from the Albert B. Reagan Memorial Fund to aid research by young scientists.—JOHN C. FRAZIER, *Secretary*.

Membership in the Association

Eligibility for Membership

Membership in the Association is open to all persons engaged in scientific work, whether in the fields of the natural or the social sciences; to all amateur scientists, whatever their special interests; and to all who desire to follow the advances of science and its effects upon civilization. Members having made substantial contributions to the advancement of science are eligible for election as fellows.

Dues and Publications

Membership dues are \$5 per year, including subscriptions for the monthly A.A.A.S. BULLETIN and either the weekly journal *Science*, now in its 100th volume, or *The Scientific Monthly*, now in its 59th volume. *Science* is a journal for professional scientists; the *Monthly* is a nontechnical journal for the intelligent public. The Association also publishes technical symposia and nontechnical books on science that are available for members at prices substantially below those to the public.

Organization and Meetings

The Association was founded in 1848, with an initial membership of 461. Papers in its early programs were classified as either natural philosophy or natural history. Now its work is organized under 16 sections and 189 associated societies having a total membership of over 500,000. Its annual meetings are the greatest regular gatherings of scientists in the world.

Nominations and Applications for Membership

Members may submit nominations for membership at any time, and persons desiring to become members can obtain membership application forms from the Office of the Permanent Secretary, the Smithsonian Institution Building, Washington 25, D. C.

Changes of Address

New addresses for the Association's record and for mailing the journals *Science* and *The Scientific Monthly*, as well as the A.A.A.S. BULLETIN, should be in the Office of the Permanent Secretary, Washington 25, D. C., at least two weeks in advance of the date when the change is to become effective.

Officers of the Association

President, Anton J. Carlson; *Permanent Secretary*, F. R. Moulton; *General Secretary*, Otis W. Caldwell; *Treasurer*, W. E. Wrather; *Director of Publications*, F. L. Campbell; *Assistant Secretary*, Sam Woodley.

Executive Committee: Burton E. Livingston, *Chairman*; Roger Adams, Joseph W. Barker, Otis W. Caldwell, Walter B. Cannon, Anton J. Carlson, Arthur H. Compton, Kirtley F. Mather, F. R. Moulton, Elvin C. Stakman, and W. E. Wrather.

